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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,285	03/25/2005	Gianluigi Angelantoni	47966.10.1	2039
22859 7590 07/14/2008 INTELLECTUAL PROPERTY GROUP FREDRIKSON & BYRON, P.A. 200 SOUTH SIXTH STREET SUITE 4000 MINNEAPOLIS, MN 55402				
EXAMINER				
WRIGHT, PATRICIA KATHRYN				
ART UNIT		PAPER NUMBER		
1797				
MAIL DATE		DELIVERY MODE		
07/14/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/529,285

Applicant(s)

ANGELANTONI ET AL.

Examiner

KATHRYN WRIGHT

Art Unit

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-21 and 23-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-21 and 23-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 4/29/2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status of the Claims

1. This action is in response to papers filed April 29, 2008 in which claims 16, 20-21, 23-36 were amended, claim 22 was canceled, and claims 37-38 were added. The amendments have been thoroughly reviewed and entered.

Any objection/rejection not repeated herein has been withdrawn by the Office. New grounds for rejection, necessitated by the amendments, are discussed.

Claims 16-21 and 23-38 are under prosecution.

Drawings

2. The drawings were received on April 29, 2008. These drawings are accepted by the Office.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 16-21 and 23-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 is again rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between

the elements. See MPEP § 2172.01. The claim broadly recites a robotic system which comprises a "horizontal axis" lying along a diameter of the stacked disks and a "vertical axis" movable along the horizontal axis. No vertical and horizontal structure is recited. American Heritage® Dictionary of the English Language defines "axis" as a reference line from which distances or angles are measured in a coordinate system. Horizontal axis and vertical axis are reference (imaginary) lines to which parts of a structure are referred; these lines are not structural elements. All objects have a horizontal and vertical axis serving to orient an object in a coordinate system. See the American Heritage® Dictionary of the English Language, Fourth Edition copyright ©2000 by Houghton Mifflin Company.

As to new claim 37, it is not clear how the "vertical axis" is operatively connected with the horizontal axis since this is considered a reference line. Similarly, in new claim 38, it not clear as to how a vertical axis (imaginary line) is fitted with the pick-up device.

Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term "vertical axis" in the claims appears to used by the claim to mean "vertical rail. While the accepted meaning of vertical axis is an "imaginary vertical line to which parts of a structure are referred". Similarly, the term "horizontal axis" in the claims appears to used by the claim to mean "horizontal rail". While the accepted

meaning of horizontal axis is an "imaginary vertical line to which parts of a structure are referred". These terms are indefinite because the original specification does not clearly redefine these terms.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 16, 24-29, 31, 33, and 35-38, as best understood, are rejected under 35 U.S.C. 102(e) as being anticipated by Pressman et al. (US Patent Pub. No. 2003/0118487), hereinafter "Pressman".

Pressman teaches an automatic system for storage of vials containing sample. The Pressman system comprises a lower chamber wherein a stack of disks 330 are independently rotatable around a vertical axis. The system of Pressman includes an upper chamber separated from the lower chamber by means of a shelf 262 fitted with an opening 266. The upper chamber (no reference no.) is considered by the Examiner the area above the shelf 262. The disks are provided with locations 332 for storing the sample container and with radial slots 340 (see for example Fig. 17; see paragraph [0140] et seq.)

The Pressman system includes a Cartesian robotic system 300 disposed in the upper chamber (area above shelf 262). The Cartesian robot of Pressman includes a pick-and-place arm 304 mounted on an elevator carriage 306 driven by a vertical (Y-axis) lead screw motor 308 atop a vertical standard 310. Arm 304 has a conventional electrically- or pneumatically-operated pick-up device (jaw-type gripper 312) adapted to grasp and move specimen vials 10 in three degrees of freedom. Arm motion in horizontal planes is afforded by lateral lead screw motor 314, which is pivotally mounted to vertical elevator carriage 306. The pick-up device 312 can move into and out of the lower chamber for loading or unloading the samples wherein. N

With respect to claims 24-28 and new claim 37, Pressman teaches a rotary outer spindle 350 which engages and rotates only one tray at a time so that the pick-and-place arm 304 can access vials therefrom by moving downwardly through an opening 266 in base plate 262 and past any idle trays via their homed notches 340. FIG. 14 shows the home positions of the trays in dashed lines, with their notches 340 aligned and embracing outer spindle 350. The spindle 350 is rotated in a precision manner from the bottom by a computer-controlled rotation stepper motor 356 and a timing belt 358 engaging timing gears 360, 362. A downwardly facing optical rotary position sensor 363 ("0" device) located over the aligned tray notches detects when and how far a tray is rotated from its home position ("0" position) and provides control feedback for rotation of stepper motor 356. Within outer spindle 350 is an inner spindle 364 carrying eight pairs of opposed keys 365, one pair for each tray. The keys 365 project from outer spindle 350 through opposed slots 366 in the outer spindle (see FIG. 15a, which

is a sectional view through the spindles and the center portions of the bottom two trays). A key home sensor 382 (encoder) is located at the top of inner spindle 364 to provide a reference point "0" position (claims 27-28).

Regarding claim 29 Pressman teaches a means for identifying the sample via data from the labeled specimen vial, (e.g. via a bar code reader) on a data entry terminal or accessioning station in the upper chamber (see paragraph [0149]).

Claim 31 does not recite any structural elements and appears to be reciting a process limitation. Applicant is reminded that only structural language is determinative of the metes and bounds of a patent claim. Functional recitations, standing alone, while perhaps helpful in understanding the meaning of a claim and the invention that it represents, cannot be relied upon to distinguish over the prior art. Nevertheless, functional language in the claims must be given full weight and may not be disregarded in evaluating the patentability of the subject matter defined employing such functional language. However, an applicant must establish that what is expressly taught by the prior art does not inherently function in the manner required by the claim.

As to new claim 38, the elevator carriage 306 (vertical axis) of Pressman is fitted with the pick-up device (gripper 312) via arm 304. Note that claim does not require the vertical axis be directly fitted with the pick-up device.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 17-23, 30 and 34, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Pressman (US Patent Pub. No. 2003/02118487) in view of Knippscheer et al (US Patent No. 5,233,844) hereinafter "Knippscheer".

The teachings of Pressman have been summarized previously, *supra*.

Pressman does not teach a temperature-controlled thermo-insulated lower chamber, a thermally insulated shelf, or a controlled access opening into the lower chamber.

However, it is conventional for biological vials to be stored in a temperature-controlled thermo-insulated chamber, see Knippscheer.

Knippscheer teaches a cryogenic storage unit defining an upper and lower chamber, 122 and 22, respectively (see Fig. 1). The upper wall 50 of chamber 22 reads on the insulated shelf. Disposed inside insulated storage chamber 22 are pluralities of vertically disposed disks 24 that support a multiplicity of specimen-containing vials 28. As further illustrated in FIG. 1, housing 20 is provided on shelf 50 with a swingable or slidable door 100 for closing the access opening 48. Note that the door 100 can be opened and closed by a robot mechanism or actuator 102 under the control of computer 42. Knippscheer teaches that use of a temperature-controlled thermo-insulated chamber help to ensure the biological specimens can be stored almost indefinitely (see col. 1, lines 13, et seq.)

Accordingly, it would have been obvious to one of ordinary skill in the art to have included in Pressman, the temperature-controlled thermo-insulated lower chamber, of Knippscheer, since it is well known that use of a temperature-controlled thermo-insulated chamber ensures the biological specimens can be stored almost indefinitely (see col. 1, lines 13, et seq.)

With respect to claims 20-21, the combined system of Pressman and Knippscheer discloses the claimed invention except for the access opening having a length at least equivalent to the maximum radial distance between two samples on the same disk or the radial slot having a length at least equivalent to the maximum radial distance between two sample on the same disk. However, it would have been an

obvious matter of design choice to construct the lengths of the opening and radial slots in such a manner, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art.

Response to Arguments

11. Applicant's arguments filed April 29, 2008 have been fully considered but they are not persuasive.

In response the previous rejection of claims 16-36 under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements, Applicant argues that the "vertical axis" and "horizontal axis" are used and described as structural elements of the Cartesian robotic system. Applicant points to paragraph [0028] of Applicant's corresponding PG pub. No. 2005/0260102 which describes a "skid" for horizontal movement of the robotic system, wherein such "skid" conveys the vertical axis.

The Examiner respectfully disagrees. As discussed above, the claim broadly recites a robotic system having a "horizontal axis" lying along a diameter of the stacked disks and a "vertical axis" movable along the horizontal axis. No vertical and horizontal structures are recited. American Heritage® Dictionary of the English Language defines "axis" as a reference line from which distances or angles are measured in a coordinate system. Horizontal axis and vertical axis are known in the art as reference (imaginary) lines to which parts of a structure are referred, these lines are not themselves structural

elements. All objects have a horizontal and vertical axis serving to orient an object in a coordinate system. See the American Heritage® Dictionary of the English Language, Fourth Edition copyright ©2000 by Houghton Mifflin Company.

Applicant is respectfully reminded that where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. Furthermore, paragraph [0028] of the Applicant's corresponds to PG pub. no. 2005/0260102 recites " . . . the robotic system 4 with at least two numerical control axes is composed of a skid for the horizontal movement which, in turn, conveys a vertical axis that is fitted with pick-up device 18 and the end part of an optical sensor 10 to obtain a return signal of the precision of the positioning of the gripper 18 in relation to the location 17." Thus, the axes are numerical control axes, not structural elements. The only structure recited appears to be the "skid". The Examiner maintains that the original specification and claims do not appear to recite the "vertical axis" and "horizontal axis" as structural elements of the Cartesian robotic system. Instead the instant application makes reference to a skid. Thus, specification fails to clearly set forth that the "vertical axis" and "horizontal axis" are to be interpreted contrary to their ordinary meaning, that is, as structural elements. Moreover, when referencing the "horizontal axis" and "vertical axis", Applicant fails to even reference corresponding structural elements in the drawings, which further

supports the Examiner's assertion that the aforementioned axes are not structural elements.

In response to the previous rejection of claims 16, 24-29, 31, 33, and 35-36 under 35 U.S.C. 102(e) as being anticipated by Pressman (US Patent Pub. No. 2003/0118487), Applicant argues Pressman fails to teach a Cartesian robotic system. Applicant asserts that such a system is well known to have two perpendicular axes, a horizontal one (or x-axis) and a vertical one. Applicant alleges that Pressman cannot operate according to a Cartesian system (i.e., meaning mobility along only two axes). Applicant asserts that Pressman teaches mobility along three axes (i.e., vertical, horizontal and rotary). Applicant also argues that Pressman does not extend in the horizontal axis along the diameter of the stacked disks.

The Examiner respectfully disagrees that Pressman fails to teach a Cartesian robotic system. First, Pressman teaches a Cartesian robotic system 300 disposed in the upper chamber (area above shelf 262). The Cartesian robot of Pressman includes a pick-and-place arm 304 mounted on an elevator carriage 306 driven by a vertical (Y-axis) lead screw motor 308 atop a vertical standard 310. Arm motion in a horizontal plane (X-axis) is afforded by lateral lead screw motor 314, which is pivotally mounted in a clevis-type bracket 316 to elevator carriage 306. See paragraph [0133] and Fig. 13 of Pressman. The fact that the robotic system of Pressman has an additional axis of mobility is not germane to the argument. First, contrary to Applicant's assertion, Cartesian robotic systems can have mobility along more than one axis. See for example claim 4 of US Patent No. 4,429,266 to Tradt which describes a Cartesian robotic arm

having three degrees of freedom. Furthermore, the claims use the transitional phrase “comprising”, which signals that the entire claim is presumptively open-ended (see MPEP 2111.03). “Comprising” is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim. Thus, the comprising language of the claim requires that the robotic system of Pressman must at least move along vertical and horizontal axis. However, the term comprising does not exclude other elements (e.g., rotational movement) from being present. Therefore, the robotic system of Pressman falls within the scope of the claim. As for Applicant's assertion that t Pressman does not extend in the horizontal axis along the diameter of the stacked disks. The Examiner does not agree since Pressman explicitly teaches at paragraph [0133] arm motion in horizontal plane is afforded by lateral lead screw motor 314. In other words, the lead screw motor moves the arm 304 horizontally above and along a plane parallel to the plane defined by diameter of the stack of disks 330 in the lower chamber, as is clear from Fig. 13.

Applicant also argues that the shelf 262 of Pressman does not form upper and lower chambers for the machine. Applicant argues that the “portion above the shelf 252 is shown to be fully open to the environment, which would not be symbolic of a chamber”.

The Examiner again respectfully disagrees. The area above the shelf 262 (i.e., upper chamber) is not defined in the claim as “enclosed” in any manner or “closed from the environment”. Giving the claims the broadest reasonable interpretation, the

Examiner asserts the term chamber does not be "fully closed from the environment". Thus, the area above the shelf 262 is considered a "chamber". Applicant is reminded that although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to the previous rejection of claims 17-23, 30 and 34, under 35 U.S.C. 103(a) as being unpatentable over Pressman (US Patent Pub. No. 2003/02118487) in view of Knippscheer (US Patent No. 5,233,844), Applicant argues the Pressman teaches a different way of storing specimens than that of Knippscheer. That is the containers of Pressman include a liquid preservative solution. From this Applicant concludes that one skilled in the art would not logically drawn to combine the teachings of Knippscheer and Pressman since the combination would result in unnecessary protection of samples of the system.

The Examiner respectfully does not agree. The mere disclosure in Pressman of using a preservative solution to preserve the biological samples in the containers does not constitute a teaching away from the combination because such disclosure does not criticize, discredit, or otherwise discourage the use of a temperature-controlled thermo-insulated lower chamber for helping preserve the samples. Furthermore, it is well known that preservative solutions have a limited shelf life and a temperature-controlled thermo-insulated chamber ensures the biological specimens can be stored almost indefinitely or at least extend the shelf life of the preserved samples (see col. 1, lines 13, et seq.) See MPEP 2123.

Conclusion

12. No claims are allowed.
13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KATHRYN WRIGHT whose telephone number is (571)272-2374. The examiner can normally be reached on Monday thru Thursday, 9 AM to 6 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

pkw

/Jill Warden/
Supervisory Patent Examiner, Art Unit 1797